



NOAA Teacher at Sea
Dennis Starkey
Onboard NOAA Ship MILLER FREEMAN
June 15 – August 4, 2006

NOAA TEACHER AT SEA: Denny Starkey
Aboard the MILLER FREEMAN
Pollock Studies in the Bering Sea
July 21, 2006

Gathering Pollock Data and “Getting Slimed”

Science and Technology Log

My job on board is to work closely with the fisheries biologists to collect specific information from the sample of the fish we catch in our nets. The first step is to dress in boots and full rain-gear attire. They don't call the area we process Pollock in the, “slime lab” for nothing! All the fish in the net are accounted for in some way. Different species are separated at the sorting table first. Each kind of fish species we catch is also weighed and recorded even though they are not our target species. After separating the kinds of fish, we count off about sixty Pollock at a time into what look like heavy-duty laundry baskets. We then take them over to a scale that is networked with computer software program call FSCS. This program specializes in data collecting, coordinating, and reporting. After the contents of the trawl are weighed, a workable representative of the sample is collected from the entire catch. The biologists determine the amount of Pollock to be “worked up” based on the large or small volume of fish caught. The unneeded fish are deposited overboard to either swim away or return to the sea expired as potential energy for the food chain.



The scale used to acquire data on the Pollock

Roughly five baskets containing about sixty mature fish each are then checked for gender. We do this by making an incision into the abdomen and find either two yellow egg sacks on a female or a ribbon like vessel that is the testes on the male. From personal experience, I'll tell you this can get extremely difficult in the small immature Pollock. The egg sacks almost become invisible and the testes become nearly non-existent!

The gender specific baskets are separated into separate containers and are moved over to the measuring device. Again, this measurement technology is tied into the FSCS system for ease of data entry. We use a device called an Ichystick to enter this data. It looks like a space aged metal tray that is about 90 centimeters long with blinking lights. It works by using an electro magnetic current to mark the length of the fish in centimeters. It has a stylus that attaches to a person's finger that contains a small magnet. When the stylus momentarily stops where you want it, at the fork of the fish's tail, a tone is heard and the length is noted on the computer screen. The software is set to record all of the males, and then the females, as we work toward processing them all. At this point it may have taken an hour and a half to process about 400 fish.

Occasionally we catch different size and aged Pollock. When this happens, a sub sample is collected. This is pretty labor intensive because the three age classes are separated before being processed with the steps mentioned above. "Ones" are first years, "seconds" are two-year growth, and "three" are mature and up. Smaller fish tend to come in larger amounts and take twice as long to determine gender. Each age class is also weighed to find a general ratio between ages found in the school. When there are smaller fish it can take as long as three hours to perform all the required steps!

"Brain" Surgery

After that, a representative number of fish of each age category are randomly selected to have their individual weight, length, gender, and age confirmed. This is usually done by two people. One person weighs, determines length and gender, and then makes an incision on the top of the fish's head near the brain to remove two otolith ear bones from each side of the brain. The second person extracts them, washes them, and puts them in a capped vial. These two white half-crescent shaped bones are defining factors for determining the age of the fish. Length of the fish is an estimated measurement for age. The otolith bones are marked with microscopic growth rings that show if they are one or two years of age. After they are inserted into a specimen vial they are preserved with alcohol, and are brought back to a laboratory on land for final confirmation. By this time the slime lab is very messy. Scales and certain organ parts fall from the fish cavity during this process. Everything gets hosed off, even the "touch" monitors and people! The sea birds that follow us love it when the big red fire hose comes out to blast the "slime lab" clean again. They pick up tidbits and small fish when they get carried over the side of the ship.

Personal Log

Our shifts are broken up over a twenty-four hour period. I am ready to work from 4 a.m. to 4 p.m. every day. It is not like I must work that entire time but I need to be ready to process the fish. Sometimes there is a catch ready at 4 .am. and other days there are back-to-back hauls. I actually had one day where we didn't have a trawl at all. I try to take a nap right after supper and wake up to catch a movie. Then it's right back to sleep. My sleeping quarters are warm, I rarely use any covers!

Did You Know?

Since the MILLER FREEMAN was commissioned as a government work ship it has been watched continuously for years! What this means is that an officer is on watch any time the ship is in the water. That includes out at sea or at port. Even when repairs are needed and the ship is dry-docked, there is a responsible person to administer to the ship at all times. How would you like that babysitting job? Actually, it is an act of ultimate respect and security for the ship affectionately called "SALLY" by the office staff on board.